IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

SCHACHT ET AL. olicant:

Examiner:

UNKNOWN

Serial No.:

10/786,238

Group Art Unit:

1723

Filed:

FEBRUARY 23, 2004

Docket:

163.1743US01

Confirmation

9174

No.:

Title:

METHODS FOR TREATING MEMBRANES AND SEPARATION FACILITIES AND

MEMBRANE TREATMENT COMPOSITION

CERTIFICATE UNDER 37 CFR 1.8:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July <u>27</u> 2004.

PATENT TRADEMARK OFFICE

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Mail Stop Amendment

Sir:

We are transmitting herewith the attached:

☐ Transmittal Sheet in duplicate containing Certificate of Mailing

☐ Information Disclosure Statement, Form 1449, 148 Reference(s)

Return postcard

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers or any future reply, if appropriate. Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. A duplicate of this sheet is enclosed.

MERCHANT & GOULD P.C. P.O. Box 2903, Minneapolis, MN 55402-0903 612.332.5300

Reg. No.: 34,994 DDaley:PLSkaw

PATENT

S/N 10/786,23

ED STATES PATENT AND TRADEMARK OFFICE

Applicant:

SCHACHT ET AL.

Examiner:

UNKNOWN

Serial No.:

10/786,238

Group Art Unit:

1723

Filed:

FEBRUARY 23, 2004

Docket No.:

163.1743US01

Title:

METHODS FOR TREATING MEMBRANES AND SEPARATION

FACILITIES AND MEMBRANE TREATMENT COMPOSITION

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on July 2004.

INFORMATION DISCLOSURE STATEMENT (37 C.F.R. § 1.97(b))

Mail Stop Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Dear Sir:

With regard to the above-identified application, the items of information listed on the enclosed Form 1449 are brought to the attention of the Examiner.

This statement should be considered because it is submitted before the mailing date of a first Office Action on-the-merits. Accordingly, no fee is due for consideration of the items listed on the enclosed Form 1449.

A copy of any foreign patent document or "Other Document" listed on the Form 1449 is enclosed, in accordance with 37 C.F.R. §1.98(a)(2). Because this application was filed after June 30, 2003, copies of the U.S. Patents and U.S. patent publications listed on the enclosed Form 1449 are not provided.

No representation is made that a reference is "prior art" within the meaning of 35 U.S.C. §§ 102 and 103 and Applicants reserve the right, pursuant to 37 C.F.R. § 1.131 or otherwise, to establish that the reference(s) are not "prior art." Moreover, Applicants do not represent that a reference has been thoroughly reviewed or that any relevance of any portion of a reference is intended.

Consideration of the items listed is respectfully requested. Pursuant to the provisions of M.P.E.P. 609, it is requested that the Examiner return a copy of the attached Form 1449, marked as being considered and initialed by the Examiner, to the undersigned with the next official communication.

Please charge any additional fees or credit any overpayment to Deposit Account No. 13-2725.

Respectfully submitted,

MERCHANT & GOULD P.C. P.O. Box 2903 Minneapolis, Minnesota 55402-0903 (612) 332-5300

Date: My 2-6, 2-014

Dennis R. Daley Reg. No. 34,994

DRD:PLSkaw

| FORME | ***/C | NFOR |
|--|-------------------|-----------|
| 0 35 | JUN | PK OFFICE |
| \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | TQAQ ^T | |

FORMATION DISCLOSURE STATEMENT

IN AN APPLICATION

(Use several sheets if necessary)

| Docket Number: | Application Number: |
|----------------|---------------------|
| 163.1743US01 | 10/786,238 |

Applicant: SCHACHT ET AL.

Filing Date: 02/23/2004 Group Art Unit: 1723

| | | U | .S. PATENT DOCUME | NTS | | <u></u> |
|---------------------|--------------|------------|-------------------|-------|----------|-------------------------------|
| EXAMINER INITIAL | DOCUMENT NO. | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
| | 3,794,169 | 02/26/1974 | Sisk et al. | | | |
| | 3,802,390 | 04/09/1974 | Blair et al. | | | |
| | 3,840,402 | 10/08/1974 | Tobin, III | | | |
| · | 3,912,624 | 10/14/1975 | Jennings | | | |
| | 3,992,301 | 11/16/1976 | Shippey et al. | | | |
| | 4,153,545 | 05/08/1979 | Zwack et al. | | | |
| | 4,222,871 | 09/16/1980 | Lefeuvre | | | |
| | 4,224,963 | 09/30/1980 | Stahle | | | |
| • | 4,244,820 | 01/13/1981 | Hauk et al. | | | |
| | 4,299,121 | 11/10/1981 | Asayama et al. | | | |
| - | 4,409,088 | 10/11/1983 | Kanno et al. | | | |
| | 4,482,514 | 11/13/1984 | Schindler et al. | | | |
| | 4,624,760 | 11/25/1986 | Pottinger et al. | | | |
| | 4,740,308 | 04/26/1988 | Fremont et al. | | | |
| | 4,792,401 | 12/20/1988 | Truex et al. | | | |
| | 4,801,375 | 01/31/1989 | Padilla | | | |
| | 4,871,683 | 10/03/1989 | Harris et al. | | | |
| | 4,923,609 | 05/08/1990 | Jardine | | | |
| | 4,943,374 | 07/24/1990 | Heininger et al. | | | |
| | 5,028,329 | 07/02/1991 | Drioli et al. | | | |
| | 5,039,324 | 08/13/1991 | Goldberg | | | <u></u> |
| · | 5,147,309 | 09/15/1992 | Hemmerich et al. | | | |
| - | 5,169,412 | 12/08/1992 | Prasad et al. | | | |
| | 5,171,446 | 12/15/1992 | Shen | | | |
| | 5,221,477 | 06/22/1993 | Melcher et al. | | **** | |
| | 5,242,046 | 09/07/1993 | Bailey | | | |

| EXAMINER | DATE CONSIDERED |
|----------|-----------------|
| | |

| FΩ | RM | 1449 | , |
|----|-------|------|---|
| | TAIAT | 1772 | |

INFORMATION DISCLOSURE STATEMENT

Docket Number: 163.1743US01 Application Number: 10/786,238

IN AN APPLICATION

Applicant: SCHACHT ET AL.

(Use several sheets if necessary)

Filing Date: 02/23/2004 Group Art Unit: 1723

| r- | | | · | ···· | |
|----|-----------------|------------|-------------------|------|---|
| | 5,395,429 | 03/07/1995 | Sutsko et al. | | |
| | 5,456,843 | 10/10/1995 | Koenhen | | |
| | 5,560,828 | 10/01/1996 | Wenten et al. | | |
| | 5,605,628 | 02/25/1997 | Davidson et al. | | |
| | 5,690,830 | 11/25/1997 | Ohtani et al. | | |
| | 5,801,051 | 09/01/1998 | Kiefer et al. | | |
| | 6,004,374 | 12/21/1999 | Rao et al. | | |
| | 6,027,572 | 02/22/2000 | Labib et al. | | |
| | 6,071,356 | 07/06/2000 | Olsen | | |
| | 6,112,908 | 09/05/2000 | Michaels | | |
| | 6,158,721 | 12/12/2000 | Katou, H. et al. | | |
| • | 6,161,250 | 12/19/2000 | Young et al. | | |
| | 6,174,351 | 01/16/2001 | McDowell et al. | | |
| - | 6,197,203 | 03/06/2001 | Ishida et al. | | |
| | 6,197,739 B1 | 03/06/2001 | Oakes et al. | | |
| | 6,214,231 | 04/10/2001 | Cote et al. | | |
| | 6,261,457 B1 | 07/17/2001 | Wenthold et al. | | |
| | 6,280,626 | 08/28/2001 | Miyashita et al. | | |
| | 6,288,222 | 09/11/2001 | Roth et al. | | |
| | 6,326,340 B1 | 12/04/2001 | Labib et al. | | |
| | 6,351,864 | 03/05/2002 | Karafa et al. | | |
| | 6,355,173 B1 | 03/12/2002 | den Bieman et al. | | |
| | 6,387,189 B1 | 05/14/2002 | Gröschl et al. | | |
| | 6,402,956 | 06/11/2002 | Andou et al. | | |
| | 2002/0112743 A1 | 08/22/2002 | Tabani et al. | | |
| | 6,454,871 B1 | 09/24/2002 | Labib et al. | | |
| - | 6,485,762 | 11/26/2002 | Rizvi et al. | | |
| | 6,499,606 | 12/31/2002 | Grangeon et al. | | |
| | 6,515,115 | 02/04/2003 | Kwant et al. | | |
| | <u> </u> | | | | L |

| ************************************** | · · · · · · · · · · · · · · · · · · · | | _ |
|--|---|-------------|-------|
| EXAMINER | DATE CONSIDERED | | |

| FOR | M | 144 | Q. |
|-----|---|-----|----|

INFORMATION DISCLOSURE STATEMENT

Docket Number: 163.1743US01 Application Number: 10/786,238

IN AN APPLICATION

Applicant: SCHACHT ET AL.

(Use several sheets if necessary)

Filing Date: 02/23/2004 Group Art Unit: 1723

| | 6,524,481 | 02/25/2003 | Zha et al. | | | | |
|---|-----------------|------------|-------------------|-------|----------|---------------|------|
| | 6,619,302 | 09/16/2003 | Labib et al. | | | | |
| | 2004/0007255 A1 | 01/15/2004 | Labib et al. | | | | |
| | | FOR | EIGN PATENT DOCUM | ENTS | | | |
| | DOCUMENT NO. | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLA | TION |
| | | | | | | YES | NO |
| | 8934601 | 11/16/1989 | AU | | | abstract only | |
| | 1221648 | 07/07/1999 | CN | | | abstract only | |
| | 2818127 A1 | 11/16/1978 | DE | | | abstract only | |
| | 3818919 | 12/14/1989 | DE | | | abstract only | |
| | 4101045 | 08/08/1991 | DE | | | abstract only | |
| - | 4109732 | 10/01/1992 | DE | | | abstract only | |
| | 4226673 | 02/17/1994 | DE | | | abstract only | |
| | 19724172 A1 | 12/10/1998 | DE | | 1 | abstract only | |
| | 19730441 A1 | 01/21/1999 | DE | | | abstract only | |
| | 10004863 A1 | 02/15/2001 | DE | | : | abstract only | |
| | 19920269 A1 | 03/08/2001 | DE | | " | abstract only | |
| | 301597 | 02/01/1989 | EP | | | abstract only | |
| | 0 490 117 A1 | 06/17/1992 | ЕР | | | x | |
| | 0 160 014 B1 | 01/07/1993 | EP | | | | 7 |
| | 526372 A1 | 02/03/1993 | EP | | | abstract only | |
| | 645174 A1 | 03/29/1995 | EP | | | abstract only | |
| | 0 970 922 A2 | 01/12/2000 | ЕР | | | | |
| | 2707520 A1 | 01/20/1995 | FR | | | abstract only | |
| | 2727787 A1 | 06/07/1996 | FR | | | abstract only | |
| | 51071880 A2 | 06/22/1976 | JP | | | abstract only | |
| - | 52058078 A2 | 05/13/1977 | JP | | | abstract only | |
| | 53108882 | 09/22/1978 | JP | | | abstract only | |
| | 54067574 | 05/31/1979 | JP | | | abstract only | |

| EXAMINER | DATE CONSIDERED |
|----------|-----------------|

FORM 1449*

INFORMATION DISCLOSURE STATEMENT

IN AN APPLICATION

(Use several sheets if necessary)

Docket Number: 163.1743US01 Application Number: 10/786,238

Applicant: SCHACHT ET AL.

Filing Date: 02/23/2004

Group Art Unit: 1723

| | 55049887 B4 | 12/15/1980 | JР | abstract only |
|----------|-------------|------------|----|---------------|
| | 56024006 | 03/07/1981 | JP | abstract only |
| | 56015924 B4 | 04/13/1981 | JР | abstract only |
| | 61153104 A2 | 07/11/1986 | JР | abstract only |
| | 61192309 A2 | 08/26/1986 | JP | abstract only |
| | 63104610 A2 | 05/10/1988 | JP | abstract only |
| | 63126513 A2 | 05/30/1988 | JP | abstract only |
| | 63147506 | 06/20/1988 | JP | abstract only |
| | 01104309 | 04/21/1989 | JP | abstract only |
| | 01262903 | 10/19/1989 | JP | abstract only |
| | 01262904 | 10/19/1989 | JP | abstract only |
| • | 02183749 | 07/18/1990 | JP | abstract only |
| | 03042018 | 02/22/1991 | JP | abstract only |
| • | 04317726 | 11/09/1992 | JP | abstract only |
| | 05277345 | 10/26/1993 | JP | abstract only |
| | 06023246 | 02/01/1994 | JP | abstract only |
| | 07000770 A2 | 01/06/1995 | JP | abstract only |
| | 07246320 A2 | 09/26/1995 | JP | abstract only |
| | 07313851 A2 | 12/05/1995 | JP | abstract only |
| | 09108670 A2 | 04/28/1997 | JP | abstract only |
| | 09117647 | 05/06/1997 | JP | abstract only |
| | 09262442 A2 | 10/07/1997 | JP | abstract only |
| | 10052377 A2 | 02/24/1998 | JP | abstract only |
| | 10057957 A2 | 03/03/1998 | JP | abstract only |
| | 10085562 A2 | 04/07/1998 | JP | abstract only |
| <u> </u> | 11057415 | 03/02/1999 | JP | abstract only |
| - | 11077042 A2 | 03/23/1999 | JP | abstract only |
| - 8 | 11104636 A2 | 04/20/1999 | Љ | abstract only |
| | 11165186 A2 | 06/22/1999 | JР | abstract only |

| EXAMINER | DATE CONSIDERED |
|----------|-----------------|

| FORM 1449* INFORMATION DISCLOSURE STATEMENT | | Docket Number: 163.1743US01 | Application Number: 10/786,238 |
|---|-----------------------------------|-----------------------------|--------------------------------|
| IN AN APPLICATION | | Applicant: SCHACHT ET AL | |
| | (Lies escent) shoots if managemy) | Filing Date: 02/23/2004 | Group Art Unit: 1723 |

| | | · • | · · · · · · · · · · · · · · · · · · · | | | |
|-------------|---|-------------------------------|---------------------------------------|-------------|---------------|--|
| 11169684 | 06/29/1999 | JP | | | abstract only | |
| 11197685 A | A2 07/27/1999 | JP | | | abstract only | |
| 11256193 | 09/21/1999 | JP | | | abstract only | |
| 11309346 A | 11/09/1999 | JP | | | abstract only | |
| 200000059 | 8 01/07/2000 | JP | | | abstract only | |
| 200005167 | 0 A2 02/22/2000 | JP | | | abstract only | |
| 200006127 | 3 02/29/2000 | JP | | | abstract only | |
| 200032575 | 8 A2 11/28/2000 | JP | | | abstract only | |
| 200103816 | 4 A2 02/13/2001 | JP | | | abstract only | |
| 200107936 | 6 03/27/2001 | JP | | | abstract only | |
| 200110476 | 0 04/17/2001 | JP | | | abstract only | |
| 200114567 | 6 05/29/2001 | JP | | | abstract only | |
| 200120505. | 5 07/31/2001 | JP | | | abstract only | |
| 200125938 | 4 09/25/2001 | JP | | | abstract only | |
| 200101816 | 8 03/05/2001 | KR | | | abstract only | |
| WO 951752 | 26 A1 06/29/1995 | PCT | | | abstract only | |
| WO 973383 | 32 A1 09/18/1997 | PCT | | | abstract only | |
| WO 20000 | 18498 A1 04/06/2000 | PCT | | | abstract only | |
| 2033579 | 04/20/1995 | RU | | | abstract only | |
| 2046080 | 10/20/1995 | RU | | | abstract only | |
| 743691 | 07/02/1980 | SU | | | abstract only | |
| 948386 | 08/07/1982 | SU | | | abstract only | |
| 1350434 | 11/07/1987 | SU | | | abstract only | |
| 1532099 | 12/30/1989 | SU | | | abstract only | |
| - 1701358 A | 1 12/30/1991 | SU | | | abstract only | |
| * | OTHER DOCUMENT | S (Including Author, Title, D | ate, Pertinent P | ages, Etc.) | | |
| · | "AirFlush® processing: Minimise chemicals by AIR-enhanced membrane cleaning," http://www.xflow.nl/english/concepten/airflush.html, 3 pages (Date Printed February 15, 2002) | | | | | |
| | Allen, V. et al., "Test program for physical cleaning and fouling prevention in reverse osmosis systems," Report, CEL-CR-78.010, Order AD-A055624 (1978) (1 page abstract) | | | | | |

| · | |
|-------------|-----------------|
| EXAMINER | DATE CONSIDERED |
| L/O WINTER | DATE CONCIDENCE |
| | |

| FORM 1449* INFORMATION DISCLOSURE STATEMENT | Docket Number: 163.1743US01 | Application Number: 10/786,238 | |
|---|--------------------------------|--------------------------------|--|
| IN AN APPLICATION | Applicant: SCHACHT ET AL. | | |
| (Use several sheets if necessary) | Filing Date: 02/23/2004 | Group Art Unit: 1723 | |

| | Balek, W., "Overview of Food Safety Regulation in the United States," <i>International Sanitary Supply Association</i> , pp. 1-8 (March 30, 2001) |
|---|---|
| | Bellara, S. et al., "Gas Sparging to enhance permeate flux in ultrafiltration using hollow fibre membranes," Journal of Membrane Science, Vol. 121, No. 2, pp. 175-184 (December 11, 1996) (1 page abstract) |
| | Bellara, S. et al., "Flux enhancement in hollow fiber membrane systems," IChemE Res. Event, Eur. Conf. Young Res. Chem. Eng., 2nd, Vol. 1, pp. 310-312 (1996) (1 page abstract) |
| | Bodzek, M., "Membrane techniques in air cleaning," Pol. J. Environ. Stud., Vol. 9, No. 1, pp. 1-12 (2000) (1 page abstract) |
| | Bouhabila, E. et al., "Microfiltration of activated slude using submerged membrane with air bubbling (application to wastewater treatment)," <i>Desalination</i> , Vol. 118, Nos. 1-3, pp. 315-322 (1998) (1 page abstract) |
| | Bouhabila, E. et al., "Fouling characterization in membrane bioreactors," Separation and Purification Technology, Vol. 22 and 23, Nos. 1-3, pp. 123-132 (2001) (1 page abstract) |
| | Bourcier, W. et al., "Pretreatment of oil field and mine waste waters for reverse osmosis," <i>Environ. Sci. Res.</i> , Vol. 52, pp. 509-519 (1996) (1 page abstract) |
| | Cabassud, C. et al., "Flux enhancement by a tangential gas flow in ultrafiltration hollow fibers for drinking water production," <i>ProcWorld Filrt. Congr.</i> , 7th, Vol. 2, pp. 496-500 (1996) (1 page abstract) |
| | Cabassud, C. et al., "How slug flow can improve ultrafiltration flux in organic hollow fibres," <i>Journal of Membrane Science</i> , Vol. 128, pp. 93-101 (1997) |
| | Cabassud, C. et al., "Air sparging in ultrafiltration hollow fibers: relationship between flux enhancement, cake characteristics and hydrodynamic parameters," <i>Journal of Membrane Science</i> , Vol. 181, No. 1, pp. 57-69 (January 15, 2001) (1 page abstract) |
| | Chakma, A., "Separation of CO2 and SO2 from flue gas streams by liquid membranes," <i>Energy Convers. Manage.</i> , Vol. 36, Nos. 6-9, pp. 405-410 (1995) (1 page abstract) |
| | Chang, S. et al., "Characteristics of microfiltration of Suspensions with inter-fiber two-phase flow," <i>Journal of Chemical Technology & Biotechnology</i> , Vol. 75, No. 7, pp. 533-540 (2000) (1 page abstract) |
| | Cheng, T. et al., "Effects of gas slugs and inclination angle on the ultrafiltration flux in tubular membrane module," <i>J. Membr. Sci.</i> , Vol. 158, Nos. 1-2, pp. 223-234 (1999) (1 page abstract) |
| | Cheng, T., "Influence of inclination on gas-sparged crossflow ultrafiltration through an inorganic tubular membrane," <i>Journal of Membrance Science</i> , Vol. 196, No. 1, pp. 103-110 (2002) (1 page abstract) |
| | Chevyan, M., "Introduction. Definition and Classification of Membrane Separation Processes," <i>Ultrafiltration and Microfiltration Handbook</i> , 22 pages (1998) |
| , | Cui, Z. et al., "Flux enhancements with gas sparging in downwards crossflow ultrafiltration: performance and mechanism," <i>J. Membr. Sci.</i> , Vol. 117, Nos. 1-2, pp. 109-116 (1996) (1 page abstract) |
| | Cui, Z. et al., "Airlift crossflow membrane filtration - a feasibility study with dextran ultrafiltration," <i>Journal of Membrane Science</i> , Vol. 128, No. 1, pp. 83-91 (May 28, 1997) (1 page abstract) |
| | Cui, Z. et al., "Water Treatment with Membranes and Membrane Bioreactors," http://www.eng.ox.ac.uk.World/Research/Summary/B-Biotech.html, 1 page (May 17, 2002) |
| | · · · · · · · · · · · · · · · · · · · |

| | · · · · · · · · · · · · · · · · · · · |
|----------|---------------------------------------|
| EXAMINER | DATE CONSIDERED |

| Date Mailed: | JULY | 22 | _, 2004 |
|--------------|------|----|---------|
|--------------|------|----|---------|

| FORM 1449* INFORMATION DISCLOSURE STATEMENT | Docket Number: 163.1743US01 | Application Number: 10/786,238 | |
|---|--------------------------------|--------------------------------|--|
| IN AN APPLICATION | Applicant: SCHACHT ET AL. | | |
| (Use several sheets if necessary) | Filing Date: 02/23/2004 | Group Art Unit: 1723 | |

| | "Desal™ Membrane Products, Food & Dairy Sanitary Ultrafiltration PES - 10,000 MWCO," Osmonics, 2 pages (Date Unknown) |
|---|---|
| | "Desal® Membrane Products, Dairy Processing Sanitary Ultrafiltration PES - 10,000 MWCO, " http://www.osmonics.com/Literature/Literature.asp?G=31, 2 pages (Date Printed March 12, 2003) |
| | Duin, O. et al., "Direct nanofiltration or ultrafiltration of WWTP effluent?," Proceedings of the Conference on Membranes in Drinking and Industrial Water Production, Vol. 2, pages 105-112 (October 2000) |
| | Dunham, S. et al., "Membrane Cleaning Under the Microscope Successful Cleaning Means Knowing the Foulant," Water Technology, 4 pages (September 1995) |
| | Eltron Research, Inc., "In Situ Electrolytic System for Ultrafiltration Membrane Cleaning," (1 page abstract) |
| | Fazel, M. et al., "A statistical review of 150 membrane autopsies," 7 pages (Date Unknown) |
| | Gotham, S. et al., "Model Studies of Food Fouling," pp. 1-13 (Date Unknown) |
| | Ghosh, R. et al., "Mass transfer in gas-sparged ultrafiltration: upward slug flow in tubular membranes," <i>Journal of Membrane Science</i> , Vol. 162, Nos. 1-2, pp. 91-102 (September 1, 1999) (1 page abstract) |
| • | Hong, S. et al., "Assessing pathogen removal efficiency of microfiltration by monitoring membrane integrity," Water Science & Technology: Water Supply, Vol. 1, No. 4, pp. 43-48 (2001) (1 page abstract) |
| , | Huang, J. et al., "Pilot-plant study of a high recovery membrane filtration process for drinking water treatment," Water Science and Technology, Vol. 41, Nos. 10-11, pp. 77-84 (2000) (1 page abstract) |
| | Imasaka, T. et al., "Application of gas-liquid two-phase cross-flow filtration to pilot-scale methane fermentation," Drying Technol., Vol. 11, No. 4, pp. 769-785 (1993) (1 page abstract) |
| | Jacangelo, J. et al., "The membrane treatment," Civil Engineering, 7 pages (September 1998) http://www.pubs.asce.org/ceonline/sepfeat.html |
| | Jenkins, S. et al., "Fluorometric analysis of the uniformity of deposition on cassette membrane filters," Appl. Occup. Environ. Hyg., Vol. 7, No. 10, pp. 665-671 (1992) (1 page abstract) |
| | Kennedy, M. et al., "Improving the performance of dead-end ultrafiltration systems: comparing air and water flushing," Water Science and Technology: Water Supply, Vol. 1, No. 5/6, pp. 97-106 (2001) |
| | Klein, G. et al., "Fouling in Membrane Apparatus: The Mechanisms of Particle Deposition," <i>Trans IChemE</i> , Vol. 77, Part C, pp. 119-126 (June 1999) |
| | Laborie, S. et al., "Flux enhancement by a continuous tangential gas flow in ultrafiltration hollow fibers for drinnking water production: effects of slug flow on cake structure," Filtr. Sep., Vol. 34, No. 8, pp. 887-891 (1997) (1 page abstract) |
| , | Laborie, S. et al., "Fouling control by air sparging inside hollowing fiber membranes - effects on energy consumption," <i>Desalination</i> , Vol. 118, No. 1-3, pp. 189-196 (1998) (1 page abstract) |
| | Laborie, S. et al., "Characterisation of gas-liquid two-phase flow inside capillaries," <i>Chemical Engineering Science</i> , Vol. 54, No. 23, pp. 5723-5735 (December 1999) (1 page abstract) |
| | |

| EXAMINER | DATE CONSIDERED |
|----------|-----------------|
| | |

| Date Mailed: | JULY | 22 | _, 2004 |
|--------------|------|----|---------|
|--------------|------|----|---------|

Sheet 8 of 9

| FORM 1449* INFORMATION DISCLOSURE STATEMENT | Docket Number: 163.1743US01 | Application Number: 10/786,238 |
|---|--------------------------------|--------------------------------|
| IN AN APPLICATION | Applicant: SCHACHT ET AL. | |
| (Use several sheets if necessary) | Filing Date: 02/23/2004 | Group Art Unit: 1723 |

| | Laitinen, N. et al., "Effect of filtration conditions and backflushing on ceramic membrane ultrafiltration of board industry wastewaters," <i>Separation and Purification Technology</i> , Vol. 24, Nos. 1-2, pp. 319-328 (2001) (1 page abstract) |
|---|--|
| | Makardij, A. et al,. "Microfiltration and ultrafiltration of milk: Some aspects of fouling and cleaning," <i>Trans IChemE</i> , Vol. 77, Part C, pp. 107-113 (June 1999) |
| | "Market Engineering Measurement Analysis of the Total Ultrafiltration, Nanofiltration, and Reverse Osmosis Membrane Elements Market," U.S. Ultrafiltration, Nanofiltration, and Reverse Osmosis Filter Element Markets 5318-15, pp. 3-1-3-6 (2000) |
| | Mercier, M. et al., "How slug flow can enhance the ultrafiltration flux in mineral tubular membranes," <i>Journal of Membrance Science</i> , Vol. 128, pp. 103-113 (1997) |
| | Mercier, M. et al., "Membrane bioreactors in fermentation process - two-phase flow may be a solution to enhance crossflow filtration flux," <i>BHR Group Conf. Ser. Publ.</i> , Vol. 25, pp. 331-348 (1997) (1 page abstract) |
| | Mercier, M. et al., "Yeast suspension filtration: flux enhancement using an upward gas/liquid slug flow - application to continuous alcoholic fermentation with cell recycle," <i>Biotechnol. Bioeng.</i> , Vol. 58, No. 1, pp. 47-57 (1998) (1 page abstract) |
| | Mercier-Bonin, M. et al., "Influence of a gas/liquid two-phase flow on the ultrafiltration and microfiltration performances: case of a ceramic flat sheet membrane," <i>Journal of Membrane Science</i> , Vol. 180, No. 1, pp. 93-102 (2000) (1 page abstract) |
| | Mercier-Bonin, M. et al., "Hydrodynamics of slug flow applied to cross-flow filtration in narrow tubes," <i>AIChE J.</i> Vol. 46, No. 3, pp. 476-488 (2000) (1 page abstract) |
| | Mercier-Bonin, M. et al., "How unsteady filtration conditions can improve the process efficiency during cell cultures in membrane bioreactors," <i>Separation and Purification Technology</i> , Vol. 22 and 23, no. 1-3, pp. 601-615 (2001) (1 page abstract) |
| | Mikulasek, P. et al., "The use of flux enhancement methods for high flux cross-flow membrane microfiltration systems," <i>Chemical and Biochemical Engineering Quarterly</i> , Vol. 14, No. 4, pp. 117-123 (2000) (1 page abstract) |
| | Mikulasek, P. et al., "Flux enhancement by gas-liquid two-phase flow for crossflow microfiltration in a tubular ceramic membrane," <i>J. Filtr. Soc.</i> , Vol. 2, No. 1, pp. 20-26 (2001) (1 page abstract) |
| | Nordman-Montelius, M. et al., "Analyses of Raw Milk Deposits on Non-Heated Polymer Surfaces," pp. 276-285 (Date Unknown) |
| | Paul, D. et al., "Membrane separation processes for clean production," <i>Environ. Prog.</i> , Vol. 17, No. 3, pp. 137-141 (1998) (1 page abstract) |
| | Paulson, D., "Membranes, the Finest Filtration, Filtration News, http://www.osmonics.com/products/Page698.htm, 9 pages (July 1, 1995) |
| - | Princeton Trade & Technology Inc., "Cleaners for Wastewater Ultrafiltration Membranes," (1 page abstract) |
| | Rogut, J., "Design and development of high performance gas-liquid membrane contactors for SO2 and NOx removal from flue gases," <i>Proc. Int. Tech. Conf. Coal Util. Fuel Syst.</i> , Vol. 21, pp. 87-98 (1996) (1 page abstract) |

| EXAMINER | DATE CONSIDERED |
|----------|------------------|
| | 2/12/03/03/21/22 |

| | | \sim | $\boldsymbol{\gamma}$ | |
|--------------|------|--------|-----------------------|--------|
| Date Mailed: | JULY | 0 | L | , 2004 |

Sheet 9 of 9

| FORM 1449* INFORMATION DISCLOSURE STATEMENT | Docket Number: Application Number: 163.1743US01 10/786,238 | | |
|---|--|----------------------|--|
| IN AN APPLICATION | Applicant: SCHACHT ET AL. | | |
| (Use several sheets if necessary) | Filing Date: 02/23/2004 | Group Art Unit: 1723 | |

| | Roorda, J. et al., "Understanding membrane fouling in ultrafiltration of WWTP-effluent," Water Science and Technology, Vol. 41, No. 10-11, pp. 345-353 (2000) |
|---|---|
| | Ruiz, J. et al., "Solid aerosol removal using ceramic filters," Separation and Purification Technology, Vol. 19, No. 3, pp. 221-227 (July 1, 2000) (1 page abstract) |
| | Sandu, C. et al., "Fouling of Heating Surfaces - Chemical Reaction Fouling Due to Milk," pp. 122-167 (Date Unknown) |
| | Scott, K. et al., "Intensified membrane filtration with corrugated membranes," <i>Journal of Membrane Science</i> , Vol. 173, No. 1, pp. 1-16 (2000) (1 page abstract) |
| | Serra, C. et al., "Use of air sparging to improve backwash efficiency in hollow-fiber modules," <i>Journal of Membrane Science</i> , Vol. 161, No. 1-2, pp. 95-113 (2002) (1 page abstract) |
| | Shimizu, Y. et al., "Filtration characteristics of hollow fiber microfiltration membranes used in membrane bioreactor for domestic wastewater treatment," <i>Water Res.</i> , Vol. 30, No. 10, pp. 2385-2392 (1996) (1 page abstract) |
| 6 | "Standard Test Methods for Pore Size Characateristics of Membrane Filters by Bubble Point and Mean Flow Pore Test," pp. 1-7 (Date Unknown) |
| , | "The Environmental Technology Centre," http://www.nottingham.ac.uk/~enzetc/technology/cmf.htm," 2 pages (Date Printed March 21, 2003) |
| | "The Environmental Technology Verification Program. ETV Joint Verification Statement," U.S. Environmental Protection Agency, pp. VS-i-VS-vi (September 2000) |
| | "U-Tube Reactor and Ultrafiltration Membrane," Water Pollution Control Technology in Japan, Nightoil Treatment, 3 pages (Date Printed June 21, 2002) http://nett21.unep.or.jp/CTT_DATA/WATER/WATER_3/html/Water-165.html |
| | Väisänen, P. et al., "Treatment of UF membranes with simple and formulated cleaning agents," <i>Trans 1ChemE</i> , Vol. 80, Part C, pp. 98-108 (June 2002) |
| | Verberk, J. et al., "Combined air-water flush in dead-end ultrafiltration, Proceedings of the Conference on Membranes in Drinking and Industrial Water Production, Vol. 2, pp. 655-663 (October 2000) |
| | Verberk, J. et al., "Combined air-water flush in dead-end ultrafiltration," Water Science and Technology: Water Supply, Vol. 1, No. 5/6, pp. 393-402 (2001) |
| | Verberk, J., "Air-water cleaning for micro and ultrafiltration," http://www.gezondheidstechniek.tudelft.nl\verberk.htm, 4 pages (April 16, 2002) |
| | Verberk, J, et al., "Hydraulic distribution of water and air over a membrane module using AirFlush®," Water Science and Technology: Water Supply, Vol. 2, No. 2, pp. 297-304 (2002) |
| | Verberk, J. et al., "Combined air-water flush in dead-end ultrafiltration," TU Delft, 1 page (Date Unknown) |
| • | Wang, Z. et al., "Characteristics of dextran and BSA fouling of PS membrane and its microscopic mechanism," Shuichuli Jishu, Vol. 26, No. 5, pp. 273-276 (2000) (1 page abstract) |
| | |

23552
PATENT TRADEMARK OFFICE

| | EXAMINER | DATE CONSIDERED |
|--|----------|-----------------|
|--|----------|-----------------|